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FACT SHEET

FINAL RULE TO REDUCE TOXIC AIR EMISSIONS FROM PETROLEUM REFINERIES: CATALYTIC CRACKING UNITS, CATALYTIC REFORMING UNITS, AND SULFUR RECOVERY UNITS

TODAY'S ACTION...

- ! The Environmental Protection Agency (EPA) is issuing a final rule to reduce toxic air pollutants emitted from catalytic cracking units, catalytic reforming units, and sulfur recovery units at petroleum refineries. Toxic air pollutants, also known as air toxics, are those pollutants known or suspected to cause cancer or other serious health effects.
- ! The catalytic cracking unit "cracks" or breaks large molecules in the gas-oil feedstock to produce gasoline and other products while catalytic reforming units convert a petroleum product known as "naptha" to higher octane compounds for gasoline production. Sulfur recovery units convert the acid gases removed from process vapors to elemental sulfur.
- ! The Agency developed today's final rule after reviewing public comment on its August 1998 proposal and with input from state and local representatives, industry groups and trade associations.

BACKGROUND

- ! Under the Clean Air Act, EPA is required to regulate sources of 188 listed toxic air pollutants. On July 16, 1992, EPA published a list of industrial source categories that emit one or more of these air toxics. For listed categories of "major" sources (those that emit 10 tons per year or more of a listed pollutant or 25 tons per year or more of a combination of pollutants), the Act requires EPA to develop standards that require the application of stringent air pollution reduction measures known as maximum achievable control technology.
- ! EPA's published list of industry groups (known as "source categories") to be regulated includes catalytic cracking units, catalytic reforming units, and sulfur recovery units at petroleum refineries.
- ! The proposed rule for these source categories was published in the Federal Register on September 11, 1998.

WHAT ARE THE HEALTH AND ENVIRONMENTAL BENEFITS?

- ! Petroleum refineries emit a variety of toxic air pollutants. These air toxics vary by facility and process operations but include metals (about 30 percent of which is nickel), a wide variety of organic compounds (including carbonyl sulfide), and acid gases such as hydrogen chloride and chlorine. The health effects associated with exposure to these air toxics can include cancer, respiratory irritation, and damage to the nervous system.
- ! Today's rule will reduce nationwide emissions of air toxics by nearly 11,000 tons per year, a reduction of about 87 percent from current levels. Particular sites may achieve even greater reductions.
- ! When combined with the emissions reduction achieved by EPA's earlier petroleum refinery standards, today's final rule will reduce toxic air emissions from petroleum refineries by about 63,800 tons per year.
- ! Other benefits of today's rule include a large decrease in emissions of pollutants that are not considered air toxics. These reductions will result in lower occupational exposure levels for employees. Emissions of other pollutants such as particulate matter, volatile organic compounds, and carbon monoxide will be reduced by nearly 60,000 tons per year or by about 55 percent from existing levels.

WHO WILL BE AFFECTED BY EPA'S RULE?

- ! Today's rule applies to each petroleum refinery that is a major source of emissions of air toxics. Based on available information, EPA believes all existing refineries currently operating in the U.S. and its territories are major sources.
- ! The EPA estimates that 129 of 164 petroleum refineries currently operating in the U.S. and its territories have catalytic cracking units, catalytic reforming units, and/or sulfur recovery units that will be affected by this rule.

FINAL RULE REQUIREMENTS

- ! Today's rule limits emissions of metal and organic air toxics from catalyst regenerator vents on catalytic cracking units. Additionally, it limits air emissions of organic and inorganic air toxics from process vents on catalytic reforming units, and sulfur compounds from process vents on sulfur recovery units. Today's rule also includes requirements for by-pass lines, and operating limits for certain control options and monitoring systems.
- ! New and existing facilities subject to today's final rule can achieve the required emissions

reductions using a variety of approaches. Refineries could install new control devices, but some refineries will be able to upgrade existing emissions controls, or implement process changes to reduce emissions.

- ! Plants must also comply with the monitoring, recordkeeping, and reporting requirements in today's rule. The monitoring requirements require facilities to install specific types of monitoring systems to verify their compliance with limits on air emissions. These options include systems known as: continuous opacity monitoring systems, continuous emissions monitoring systems, or continuous parameter monitoring systems for process or control device operating parameters, depending on the control option.
- ! Today's rule also requires written plans for operation, maintenance, and monitoring procedures and descriptions of actions to be taken during startups, shutdowns, and malfunctions.
- ! Today's rule provides flexibility to the refinery industry by offering a choice of compliance options, including emissions limits and performance standards. To reduce the emissions testing and monitoring costs, facilities may measure emissions of surrogate compounds which are more easily measured substitutes for target air toxics. No testing is required for plants that are also subject to EPA's new source performance standard for petroleum refineries and have already demonstrated compliance. Today's rule also includes exemptions from certain testing and monitoring requirements, alternative monitoring procedures, and provisions for requesting monitoring alternatives.
- ! Most plants must comply with today's final rule within three years. A few plants will be allowed an extended compliance date to coordinate process and equipment changes needed to meet the requirements of EPA's new gasoline sulfur control rule issued in late 1999 (Tier 2 rule). All plants must meet the requirements of today's rule as soon as they comply with the Tier 2 rule or by January 1, 2010.

HOW MUCH WILL TODAY'S RULE COST?

- ! EPA expects the implementation of this rule to result in \$163 million in capital costs with total annual costs of \$37.2 million per year. The annual monitoring, recordkeeping, and reporting costs are estimated at \$10.1 million.

FOR MORE INFORMATION...

- ! Interested parties can download the rule from EPA's web site on the Internet under "recent actions" at: <http://www.epa.gov/ttn/oarpg>. For further information about today's rule, contact Mr. Bob Lucas of EPA's Office of Air Quality Planning and Standards at (919) 541-0884 or at lucas.bob@epa.gov.

! The EPA's Office of Air and Radiation's (OAR's) homepage on the Internet contains a wide range of information on the air toxics program and many other air pollution programs and issues. The OAR's home page address is: *<http://www.epa.gov/oar>*.